



ESSAY

Integration of HIV and Noncommunicable Diseases in Health Care Delivery in Low- and Middle-Income Countries

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HIV infection, a communicable disease, and noncommunicable diseases (NCDs) are among the major health concerns worldwide. An estimated 33 million people live with HIV, two-thirds of them in sub-Saharan Africa, where three-fourths of all AIDS-related deaths occur (1). Illness and death from NCDs exceed these numbers. In 2008, the last year for which figures are available, 36 million deaths were attributed to NCDs (2). In that same year, approximately 12.7 million people worldwide were living with cancer (2), and in 2011 approximately 366 million people worldwide were living with diabetes (3). The NCD burden is greatest in low- and middle-income countries, which account for an estimated 80% of all NCD-related deaths; about one-third of these deaths occur before age 60 years (4).

Until recently, diseases were considered either communicable (infectious) or chronic. As a result of advances in treatment, HIV infection now challenges that model so that the definition of chronic disease is not as simple or clear-cut as it once was. The World Health Organization describes chronic disease as a disease of long duration and slow progression (5). HIV and NCDs, a medical condition or diseases that are noninfectious, are now the major chronic diseases of public health concern, especially in low- and middle-income countries. Integrated approaches to address HIV infection and NCDs as well as other chronic diseases in these countries need to be developed.

Different chronic diseases have different clinical interrelationships. For example, people with HIV infection are at increased risk of other chronic infectious diseases such as tuberculosis and NCDs such as cancer, diabetes, and cardiovascular diseases (6). Antiretroviral treatments of HIV infection increase the risk of hyperlipidemia and diabetes. People living with HIV infection have 3 sources of risk of contracting NCDs: first, from HIV infection itself; second, from antiretroviral treatments; and third, from the risk associated with increasing age (7).

Chronic diseases share similarities in their risk factors, progression, and management. Unsafe sexual behavior is the major risk factor for HIV infection, and lifestyle factors such as unhealthy diet, insufficient physical activity, tobacco use, and alcohol abuse are the major risk factors for NCDs. Strategies for preventing HIV infection and NCDs are directed at modifying these behaviors and lifestyles. Effects of both HIV infection and NCDs develop progressively over time. As with management of NCDs, management of HIV infection focuses on positive health behaviors. The essential elements of prevention and management of HIV infection and NCDs — community and family support, patient involvement, and continuous follow up — are similar despite differences in the origin, pathogenesis, and clinical features of the diseases.

HIV/AIDS programs may be the largest chronic care programs implemented in most low- and middle-income countries. HIV programs involve the same elements of management of NCDs: promotion of healthy behaviors, long-term adherence to recommended treatment, regular monitoring of treatment outcomes, and active involvement of the client and family in care and treatment. Given the similarities in the prevention and management of HIV infection and NCDs, the models, tools, and approaches developed in the implementation of HIV programs could be adapted to address NCDs.

Many disease management programs are vertical; that is, they are implemented and directed in whole or to a large extent by a specialized health-delivery service and specialized health workers (8). These vertical programs have been effective in reducing the incidence of HIV infection in most low- and middle-income countries. We may need similar vertical programs to reduce the incidence of NCDs. However, it is not only the vertical nature of HIV programs that has

reduced incidence in low- and middle-income countries but also the coordinated efforts among the different stakeholders — associations of people living with HIV infection, partners of people with HIV infection, nongovernment organizations, and the communities in which people with HIV live — and funding support. This approach is similar to that employed in developed countries where NCD management is more integrated and decentralized, that is, centered in the lower levels of health care rather than centrally managed.

Low- and middle-income countries need to have strong and dynamic health systems that can respond effectively to changes in the epidemiologic pattern of diseases. These countries cannot afford to address diseases turn by turn. Chronic disease requires design of an all-inclusive model of management that is health-centered rather than disease-centered. The future direction of health care systems in developing countries should be health management rather than management of a single disease.

Integrated health systems that focus on the health needs of communities can offer several advantages in low- and middle-income countries. Integrated approaches provide people with holistic options centered on health needs of people and communities and thereby enhance community self-reliance. For example, the integration of HIV/AIDS, diabetes, and hypertension management in Cambodia has demonstrated high acceptance and good outcomes (9). Implementation of more integrated programs also helps to develop system effectiveness and cost-effectiveness, particularly in health systems with limited human resources.

Several arguments have been made for vertical health care programs. A vertical approach is believed to yield more rapid results in weak health systems (10). However, vertical programs aggravate weak health systems by diverting resources from more comprehensive approaches. Another argument for vertical approaches is related to accountability, that is, fear that integrated programs may not produce distinct deliverables and may not promote a transparent environment for accountability. However, integrated programs can be designed for transparency and accountability. It may be wise to take into account the opportunity costs of vertically designed health programs, which are more expensive than comprehensive vertically integrated programs.

In spite of its apparent advantages, integration is not a panacea. Context matters a lot. One of the risks of integrating a high-profile vertical program with a weak health system is that integration may weaken the program. Although in most situations the advantages of integrated approaches seem to outweigh the risks, integration will not mitigate the problems of limited resources and weak infrastructures. Different health system contexts should be considered on a case-by-case basis to determine whether smart and appealing integrated approaches can also have smart outcomes.

In some countries, HIV/AIDS interventions and services are already integrated with other health services and interventions, such as reproductive health, sexually transmitted infection, family planning, maternal health, nutrition, and other programs. The HIV-family planning integration in Kenya and Ethiopia is an example (10). In considering integration of HIV and NCD management, several critical questions must be considered. What would the effect on these programs be if HIV and NCD services are integrated? How do these existing programs affect the HIV–NCD integration? Should we fit NCDs into already existing integrated HIV programs?

An integrated approach to management of HIV and NCDs is appropriate not only for low- and middle-income countries but also may be appropriate for all countries. Although context-specific factors affecting integrated approaches vary from place to place and must be considered, the overall costs and outcomes of integrated HIV–NCD management should be thoroughly investigated before considering adoption of integrated approaches. More evidence on the feasibility and cost-effectiveness of different models of integration is also needed before pursuing integrated management of HIV and NCD in low- and middle-income countries.

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